

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

### Listing of Claims:

1. (currently amended) An array composition comprising:
  - a) a substrate with a surface comprising discrete sites; and
  - b) a population of microspheres comprising at least a first and second subpopulation, wherein the microspheres of ~~each~~ said first subpopulation ~~each~~ comprise a plurality of different target analytes comprising sequences from a first individual and the microspheres of said second subpopulation comprise a plurality of different target analytes comprising sequences from a second individual, wherein said plurality of different target analytes are covalently attached to each of said microspheres;

wherein said microspheres are distributed on said surface.
- 2) (original) The array composition according to claim 1 wherein said microspheres of each subpopulation further comprise an optical signature.
- 3) (original) The array composition according to claim 1 wherein said microspheres of each subpopulation further comprise an identifier binding ligand.
4. (original) The array composition according to claim 3 wherein said identifier binding ligand is a nucleic acid.
5. (original) The array composition according to claim 3 wherein said identifier binding ligand is a nucleic acids.
6. (original) The array composition according to claim 5 wherein said nucleic acids comprise genomic DNA.
7. (original) The array composition according to claim 1 wherein said target analytes are proteins.

8. (original) The array composition according to claim 1 wherein said substrate is a fiber optic substrate.

9. (original) The array composition according to claim 1 wherein said substrate is plastic.

10. (original) The array composition according to claim 1 wherein said discrete sites are wells.

11. (original) The array composition according to claim 1 wherein said microspheres are randomly distributed on said surface.

12. (cancelled)

13. (cancelled)

14 (currently amended) An array composition comprising a substrate comprising discrete sites wherein each of said discrete sites comprises a plurality of different covalently attached target analytes comprising sequences from different individuals.

15. (original) The array composition according to claim 14, wherein said plurality of different target analytes are covalently attached to said substrate.

16. (original) The array composition according to claim 14, wherein said plurality of different target analytes are covalently attached to microspheres, wherein said microspheres are distributed in said discrete sites.

17. (original) The array composition according to claim 14, wherein said target analytes are nucleic acids.

18. (original) The array composition according to claim 17, wherein said nucleic acids comprise genomic DNA.

19. (original) The array composition according to claim 14, wherein said target analytes are proteins.

20. (original) The array composition according to claim 14, wherein said substrate is a fiber optic substrate.
21. (original) The array composition according to claim 14, wherein said substrate is plastic.
22. (original) The array composition according to claim 14, wherein said discrete sites are wells.
23. (cancelled)
24. (cancelled)
25. (original) The composition according to claim 1 or claim 14, wherein said discrete sites are at a density of about 100,000 to 10,000,000 discrete sites per  $\text{cm}^2$ .
26. (original) The composition according to claim 1 or claim 14, wherein said discrete sites are at a density of about 10,000,000 to 1,000,000,000 discrete sites per  $\text{cm}^2$ .
27. (original) The composition according to claim 1 or claim 14, wherein said discrete sites are at a density of about 10,000 to 100,000 discrete sites per  $\text{cm}^2$ .
28. (currently amended) A composition comprising a population of microspheres, said population comprising at least a first and second subpopulation, wherein the microspheres of ~~each of said first and second subpopulations~~ each comprise a plurality of different target analytes comprising sequences from a first individual and the microspheres of said second subpopulation comprise a plurality of different target analytes comprising sequences from a second individual, wherein said plurality of different target analytes are covalently attached to each of said microspheres.
29. (original) The composition according to claim 28, wherein said microspheres of each of said first and second subpopulations further comprise an optical signature.
30. (original) The composition according to claim 28, wherein said microspheres of each of said first and second subpopulations further comprise an identifier binding ligand.

31. (original) The composition according to claim 30, wherein said identifier binding ligand is a nucleic acid.

32. (original) The composition according to claim 28, wherein said target analytes are nucleic acids.

33. (original) The composition according to claim 32, wherein said nucleic acids comprise genomic DNA.

34. (original) The composition according to claim 28, wherein said target analytes are proteins.

35. (cancelled)

36. (cancelled)